

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

1. (Currently Amended) A method of navigating a menu structure within an electronic product, comprising the steps of:

identifying a path sequence by which a first location within a multilevel menu would be reached by user navigation to said first location during a voice binding training mode via sequential manipulation of a manual user interface of said electronic product performed by a user in order to navigate through a series of menu levels and sub-menu levels of the multilevel menu in order to reach a particular item of interest at the first location;

upon arrival at said first location, obtaining a first utterance of speech comprising at least one word chosen by a user of said electronic product;

storing said first utterance of speech chosen by said user as a model in a user-built lexicon;

associating said first utterance with said path sequence by which said first location would be reached and generating therefrom a stored first location;

obtaining a second utterance of speech;

matching said second utterance with said model of said first utterance to identify said stored first location within said menu;

subsequently navigating to said first location in response to said matching by automatically performing said path sequence; and

upon said identifying, making a determination whether said first utterance already exists in association with said path sequence and, conditioned on results of the determination, either: (a) playing said first utterance if it already exists and giving the user the option to delete or re-enter the first utterance, or (b) prompting the user to provide said first utterance if it does not yet exist.

2. (Currently Amended) A method of navigating a multilevel menu structure within an electronic product, comprising the steps of:

identifying a user-selected navigation path sequence through said multilevel menu structure to a first location within said multilevel menu in response to user navigation through a series of menu levels and sub-menu levels of the multilevel menu in order to reach a particular item of interest at [[to]] said first location during a voice binding training mode via sequential manipulation of a manual user interface of said electronic product;

upon arrival at said first location, obtaining a first utterance of speech comprising at least one word chosen by a user of said electronic product;

storing said first utterance of speech chosen by said user as a model in a user-built lexicon;

associating said first utterance with said navigation path sequence;

obtaining a second utterance of speech;

matching said second utterance with said model of said first utterance to retrieve said navigation path sequence associated with said first utterance;

using said retrieved navigation path sequence to navigate to said first location within said menu by automatically performing said path sequence in response to said matching; and

upon said identifying, making a determination whether said first utterance already exists in association with said path sequence and, conditioned on results of the determination, either: (a) playing said first utterance if it already exists and giving the

user the option to delete or re-enter the first utterance, or (b) prompting the user to provide said first utterance if it does not yet exist.

3. (Original) The method of claim 2 further comprising storing said navigation path as a sequence of navigation steps leading to said first location.

4. (Original) The method of claim 2 further comprising storing said navigation path as a semantic sequence of navigation steps leading to said first location.

5. (Original) The method of claim 2 wherein said menu structure includes associated text and said method further comprises storing said navigation path as a semantic sequence of text associated with the navigation steps leading to said first location.

6. (Original) The method of claim 2 further comprising constructing a speech model associated with said first utterance and associating said speech model with said navigation path.

7. (Original) The method of claim 2 further comprising using a speech recognizer to compare said first and second utterances in performing said matching step.

8. (Original) The method of claim 2 further comprising constructing a speech model associated with said first utterance and using said speech model to populate the lexicon of speech recognizer; and

using said speech recognizer to compare said first and second utterances in performing said matching step.

9. (Original) The method of claim 2 wherein said step of identifying a user-selected navigation path comprises displaying said first location on a visible display associated with said electronic product and prompting said user to provide said utterance.

10. (Original) The method of claim 2 further comprising providing user feedback of the association between said first utterance and said navigation path by said first location on a visible display associated with said electronic product and producing an audible representation of said first utterance.

11. (Original) The method of claim 1 further comprising providing user feedback of the association between said first utterance and said navigation path by said first location on a visible display associated with said electronic product and producing a textual representation of said first utterance.

12. (Original) The method of claim 10 wherein said audible representation is provided by storing said first utterance as audio data and replaying said audio data at user request.

13. (Original) The method of claim 11 wherein said textual representation is provided using a speech recognizer.

14. (Original) The method of claim 11 wherein said textual representation is provided by storing text data associated with said first utterance and displaying said text data at user request.

15. (Currently Amended) A voice binding system to aid in user operation of electronic devices, comprising:

a menu navigator that provides a traversable, multilevel menu structure offering a plurality of predefined menu locations, wherein said menu navigator is operable to allow a user to identify a path sequence for navigating through said multilevel menu structure to one of said predefined menu locations via sequential manipulation of a manual user interface of said menu navigator that results in user navigation during a voice binding training mode through a series of menu levels and sub-menu levels through said multilevel menu structure in order to reach an item of interest at[[to]] said one of said predefined menu location;

a speech recognizer having an associated lexicon data store;

a processor for adding a first utterance of user-defined speech to said lexicon; and

a voice binding system coupled to said menu navigator for associating said first utterance, obtained upon arrival at said one of said predefined menu locations during said voice binding training mode, with said path sequence for navigating to said identified one of said predefined menu locations within said menu structure, wherein said menu navigator is operable to traverse to said identified menu location in response to a second utterance corresponding to said user-defined speech by automatically performing said path sequence, and wherein said voice binding system, upon manual identification of said path sequence by said user, makes a determination whether said first utterance already exists in association with said path sequence and, conditioned on results of the determination, either: (a) plays said first utterance for said user if it

already exists and gives the user the option to delete or re-enter the first utterance, or
(b) prompts the user to provide said first utterance if it does not yet exist and associates
said first utterance with said path sequence.

16. (Original) The voice binding system of claim 15 wherein said menu navigator includes at least one navigation button operable to traverse said menu structure.

17. (Original) The voice binding system of claim 15 wherein said voice binding system stores predefined menu locations as traversal path sequences.

18. (Original) The voice binding system of claim 15 wherein said voice binding system stores predefined menu locations as semantic sequences.

19. (Original) The voice binding system of claim 15 further comprising user feedback system operable to audibly reproduce the user-defined speech associated with predefined menu locations.

20. (Previously Presented) The voice binding system of claim 19 wherein said user-defined speech is stored as recorded speech waveforms and wherein said user feedback system replays said waveforms in response to user navigation to associated predefined menu locations.

21. (Previously Presented) The method of claim 2, further comprising identifying said navigation path via user navigation to said first location through said menu structure from a user-selected point in said menu structure, said path being identified as a sequence of steps executed by said user in manipulating said manual user interface from said user-selected point to said first location.

22. (Previously Presented) The method of claim 21, further comprising ascertaining user selection of said user-selected point in response to user manipulation of said manual user interface in a predefined manner at a point in time after the user has navigated to that point in said menu structure, but before the user has navigated away from that point.

23. (New) A method of navigating a multilevel menu structure within an electronic product, comprising the steps of:

identifying a first location within said multilevel menu structure by user navigation through a series of menu levels and sub-menu levels of said multilevel menu structure to reach a particular menu item of interest at the first location;

upon arrival at said first location, obtaining a first utterance of speech;

associating said first utterance with said first location and generating therefrom a stored first location;

obtaining a second utterance of speech; and

matching said second utterance with said first utterance to identify said stored first location within said multilevel menu structure; and

navigating to said first location.

24. (New) A method of navigating a multilevel menu structure within an electronic product, comprising the steps of:

identifying a user-selected navigation path through said multilevel menu structure to a first location within said multilevel menu structure by user navigation through a series of menu levels and sub-menu levels of the multilevel menu in order to reach a particular item of interest at said first location;

upon arrival at said first location, obtaining a first utterance of speech;

associating said first utterance with said navigation path;

obtaining a second utterance of speech;

matching said second utterance with said first utterance to retrieve said navigation path associated with said first utterance; and

using said retrieved navigation path to navigate to said first location within said menu.

25. (New) A voice binding system to aid in user operation of electronic devices, comprising:

a menu navigator that provides a traversable, multilevel menu structure offering a plurality of predefined menu locations and allows a user to navigate through a series of menu levels and sub-menu levels of said multilevel menu structure to an item of interest at one of said predefined menu locations within said multilevel menu structure;

a speech recognizer having an associated lexicon data store;

a processor for adding user-defined speech to said lexicon upon arrival at said one of said predefined menu locations; and

a voice binding system coupled to said menu navigator for associating said user-defined speech with said one of said predetermined menu locations within said menu structure, and operable to traverse to said one of said predefined menu locations in response to a spoken utterance corresponding to said user-defined speech.